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Effect of communication channels on success rate of entrepreneurial SMEs in the agricultural sector (a case study)

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Abstract The present research aimed at investigating the effect of communication channels on the economic success of early profitable and entrepreneur small and medium enterprises in the agricultural sector. It was an applied research in which the descriptive-survey method was used. The research sample included 356 founders of entrepreneur small and medium enterprises (at the time of conducting the research) in the Markazi province, Iran, among which 100 founders were selected according to the Cochran formulation using the stratified random sampling method. A questionnaire was used as the research tool and its validity was confirmed as the face validity by a group of teachers and experts. The questionnaire's reliability was calculated using Cronbach's alpha ($\alpha = 0.82$). The results indicated that the information seeking facilities of most of the entrepreneurs were seen at a good level (53 persons, 53%) and acquiring information from other businesses and consulting contacts with the neighbors and relatives, product sellers and promoting factors were listed as the highest priorities of the respondents, respectively. Also, there was a meaningful relationship between rate of using information and communication resources with the variables namely age, duration of operation on the job, number of people operating the business and number using loans. The results of regression analysis indicated that seven communication channels, promoters, other producers, product sellers, group visit, training films, creditors, radio and TV in the order of significance have defined 78.4% of the dependent variable changes.

1. Introduction

Agriculture is one of the pillars of economics and its development requires a particular attention to all production factors especially human-based factors including skilled-labor. In recent years, the state and private agriculture schools have been highly expanded and the mass of agriculture graduates

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fail to find any jobs after graduation and unemployment is increased among this group of graduates which adds up to other social challenges. One of the approaches for employment is to offer agriculture loans to jobseeker graduates of agriculture who can work as entrepreneurs in early profitable small businesses in the agricultural sector; the policy has been used as a supportive tool by the government and banks for the improvement of agriculture graduates employment. In fact, the core of the society dynamism includes the move towards a competitive economy, establishment of the private sector, development of entrepreneurship and expansion of SMEs. Today, SMEs are considered as the major cause of industrial structure growth in many countries (Iranian Department of Planning and Economic Studies, 2004). SME stands for small and medium enterprise and includes all small and medium-sized enterprises in any sector such as industries, services, commerce and agriculture. In fact, the fundamental determinant of success or failure of a small business is the use of various communication channels for dealing with other sectors and exposing useful and up-to-date information. This objective reality is the source of interest of scholars to propose the important role of communication channels in the actual development of small businesses based on some theoretical perspectives and also the experience of successful countries in the past and at the present. It means that communication elements act as ''driving forces'' of small businesses and promote their development (Solano et al., 2003). Communication channels are sometimes called mediator channels due to the printed or electronic channels (Zare, 1997). When local leaders and local people belong to an insider social system, the channel will have a local nature. When the communication channel communicates with the audience from outside of the social system and there is no face-to-face communication, the channel will have a complex impersonal and cosmopolitan nature such as communication through mass media including radio, television, and newspapers (Zare, 1997). Narain (2005) enumerates the limited access to technological information as the most important factor in the failure of small businesses. In an article under the title of ''Information systems role in small businesses'', Maniyan (2001) proposes some guidelines for the effective use of information and communication systems in small organizations. He concludes that the failure of many small organizations is due to the lack of knowledge about information and communication systems. In Sun and Wing's (2005) research, the internal communications of project team is identified as one of the main success factors of SMEs among 54 primary listed success factors for small and medium businesses. Suwannaporn and Speece (2010) propose the ability to track new product' information, informal communication during the work process, information and communication process, and relationships with product' suppliers as success factors for small and medium businesses. Talebi et al. (2012) in their study under the title of ''Identifying and prioritizing the growth strategies for small and medium enterprises (SMEs) in industrial clusters of Gaze-Boldaji'', conclude that the development of public relations and information sharing about products is the first priority among the business growth strategies in the considered cluster. In a research under the title of ''Entrepreneurship training toward industrialization'', Hadinejad et al. (2012) suggest that one of the frameworks for changing the entrepreneurship training term is particular focus on information and communication. In a research under the topic of ''Evaluating the impact of information technology on entrepreneurship culture and performance of firms'', Ramoz and Javanmard (2012) examined the information technology influence on entrepreneurship culture and the manufacturers' performance in Arak city, Iran. The research results indicate that the information technology has a positive and direct impact on entrepreneurship culture and in turn, the entrepreneurship culture shows a positive and direct impact on the performance of firms. Westhead et al. (2001) in a study on 621 firms show that companies with more resources and communication networks, more integrated information, and significant management techniques have more opportunities for entering into international markets. Van Gils (2005) analyzes the superior management structure for entrepreneurial SMEs in Netherlands and concludes that most of the managers and founders of such businesses lack the necessary strategic knowledge and bureaucratic interactions in relation to business plans and communication networks. Thus, training in the mentioned areas is needed in such businesses. According to the research undertaken by Hawkins (1993) in Japan; regional information centers are effective in the development and success of small and medium businesses through providing free consulting and training services. Khoshnodifar et al. (2010) evaluate the influence of Agriculture Bank and Agriculture Jihad Organization on the success of small and medium businesses in the agriculture sector. They believe that the use of information and communication sources is the most influential factor in the success of entrepreneurial SMEs in the agricultural sector. Feizpour et al. (2012) examine the effective factors on the rapid growth of small businesses in the Iranian manufacturing industries using Probit regression technique. The findings confirm that promotion and communication channels have a positive and significant influence on the rapid growth of small businesses in manufacturing industries. As a consequence, industrial, commercial, and agricultural units are known as an integral part of the economy of any country (Rafe et al., 2012). Azizi et al. (2011) examine the individual and social factors effective on recognizing entrepreneurial opportunities by top entrepreneurs of Tehran city, Iran. The present study investigates the role of these channels and sources of information in the success of small businesses in the agriculture sector.

The main objective of this research is to investigate the roles and impacts of the communication channels and information sources in success of the small and medium businesses and the entrepreneur, and the specific objectives of the research are as: determining the factors influencing the success rate among entrepreneur small and medium-sized businesses, investigating the personal–professional characteristics of the small and medium business founders in agricultural sector, investigating the priorities in using various information sources from the entrepreneur's point of view, investigating the entrepreneurs' information seeking behavior level, investigating the relations of the dependent and independent variables, investigating the effect of the informational sources on the success rate in small and medium businesses.

2. Material and methods

The present research aimed at investigating the relationship between communication channels and the success of entrepreneur small and medium enterprises. This study was an applied

research in which the descriptive-survey method was used. The statistical population of the current research constitutes all individuals who have acted in establishing small and medium businesses in agricultural sector in Markazi Province, Farahan City. In fact, these individuals, having economically justified plans, had been introduced to Agriculture Banks by Jihad Agricultural Organization for getting facilities of the quick-impact small economic enterprises, and getting the credit, they had launched small or medium businesses in agriculture field. According to the sources and documents of the management of the Agriculture Bank's branches in the province, Farahan City has been selected as the statistical population ($N = 365$) for identifying and investigating the roles of communication and information sources in the development and success of the small and medium businesses in agricultural sector, due to having the most number of entrepreneurs in the agricultural sector of the province (all of whom had utilized the mentioned facilities establishing businesses in agricultural fields). In selecting the businesses, the criterion number of individuals establishing a business was considered less than 10. The sample volume was determined 91 people based on Cochran formulation, and in order to enhance the computing accuracy, this number was arisen to 100 people. Since the entrepreneurs were acting in different agricultural fields (farming, animal farming, gardening, beekeeping, mushroom cultivation, etc.), they were divided in several categories and the respondents were selected using the proportional stratified random sampling, and then they were studied. Because the individuals were scattered in different villages across the province, on the one hand it took a lot of time and energy distributing and collecting the questionnaires, and on the other hand, the researcher had to stop by the locations many times to fill in the questionnaires since the founders of the businesses were very busy. The independent variables of the research are: age, education, activity duration, type of activity, the properties of the business such as the number of individuals employed, the amount of credit requested and received from the Agricultural Bank, interest rates on the facilities received, the time interval from proposing the plan to its approval and getting the facilities, the incentive of getting a loan and establishing a business, the problems in launching the business and the communication and information sources and channels.

The items were included in a set of expressions with special order and equal weights. The final items in relation to each factor were presented in the Likert scale. After scoring the items included in the final questionnaire, the answers given to the items were summed up and the scores of effective factors on the success of small entrepreneur businesses were obtained. The rest of the items were presented in open and bi-dimensional forms, according to other objectives of the questionnaire. The items of the questionnaire related to the factors affecting the success of the small and medium businesses were derived from the researches of Feizpour et al. (2012), Khoshnodifar et al. (2010), Ramoz and Javanmard (2012), Talebi et al. (2012), Suwannaporn and Speece (2010), Sun and Wing (2005), and others; such that the information on success rate was obtained with totally 21 variables, and the communication and information sources with 17 variables. In order to determine the reliability of the research tools, Cronbach's alpha coefficient was used, for which 30 questionnaires were completed in pilot test stage by the selected entrepreneurs, and the reliability coefficient of the questionnaire (Cronbach's alpha) was obtained as 0.82 and 0.79 for the variables of business success and information sources and channels, respectively. It is noted that, in avoiding the pretest and questionnaire error, these individuals were not used for the field stage. The face validity of the questionnaire was confirmed based on the opinion of professors and experts. The data were analyzed in two sections including the data description and an inferential analysis of the data. In descriptive analysis of the data, the descriptive statistics were used, like frequency, percentage, mean, and standard deviation, and the regression analysis and correlation analysis were used in the inferential analysis of the data.

In order to compute and categorize entrepreneurs' information seeking variable, the divided by the average method was utilized. In this method, first the variables were defined, the scale difference was resolved and the scales of variable measurements were assimilated. Then, according to the following formula, the interval of standard deviation from the mean (ISDM) method for the information seeking levels was determined (Qamar, 2002):

A = weak, A < Mean (Mean) − SD (Standard Deviation)
B = medium, Mean − SD < B < Mean
C = good, Mean < C < Mean + SD
D = excellent, Mean + SD < D

3. Results and discussion

3.1. Respondents' personal–professional characteristics

Investigating the demographic information, it was shown that the average age of the studied society was 42 years and the age range was between 26 and 78 years, and all the members of the statistical population of the research were males. Regarding education, 28% of the entrepreneurs had high school diploma, which was the highest percentage. Based on the type of the activity on which the entrepreneurs had established their small and medium businesses, 67% were animal farming, which was the highest frequency, and 3% were beekeepers, which was the least frequency (Table 1). Regarding the number of individuals establishing businesses one could say 58% of the businesses were managed by 5 people, 33% by 4, and 9% by less than 4 people.

The findings inserted in Table 2 show that 29% of the entrepreneurs, as the highest frequency, have attributed their incentives to using the facilities for establishing and developing small and medium businesses to fund for holding a job

Table 1 Frequency distribution of the entrepreneurs based on the type of the activity.

Type of activity	Frequency	Percentage
Animal farming	67	67
Farming	8	8
Milk station establishing	7	7
Orchard establishment	6	6
Mushroom cultivation	5	5
Greenhouse activities	4	4
Beekeeping	3	3
Total	100	100

Table 2 Incentives of using the facilities for establishing and developing businesses.

Incentives	Frequency	Percentage
Funding for employment	29	29
Holding a job (employment) in agricultural sector	20	20
Acting in professional fields	18	18
Profitability of the agricultural activities	14	14
Acting in professional fields and providing the capital in employment	10	10
Providing the capital for employment and employment in agricultural sector	9	9
Total	100	100

(employment), and 14% to factors as profitability of the agricultural activities.

3.2. Prioritization of factors affecting entrepreneur's success in small and medium businesses with regard to research respondents' view

Based on the research background, 21 variables were investigated as the factors affecting the success of small and medium businesses. These variables are listed in Table 3, in terms of priority according to research respondents' view.

Describing briefly some of the items in Table 3, the point of workforce specialization and skills is, respectively, having proper and related education regarding the products of the businesses and practical or administrative experience in the past. Regarding the investment security item, the point is ensuring return on investment and its profitability and, naturally, the economic performance of the businesses and the supportive rules enacted in this field attract more investments on businesses. According to respondents' prioritization, the variables of the product quality (regarding clients' satisfaction level and meeting their needs), competitiveness regarding other businesses, and the ability to cope with the unexpected events (entrepreneurs' capability of crisis management in facing the financial crisis, reduction in product demand, the economic recession, ...) are introduced as the first three priorities affecting the success in businesses. The variables of the reaction and response to market demand, the government support as commercial benefit exemption, the use of modern advanced agricultural technologies, and the use of internet are listed as the last priorities, respectively.

3.3. Prioritization of information sources and channels used by respondents

The mean score and the variation coefficient values of using the information sources/channels (Table 4) show that consulting with other businesses and advisory contacts with neighbors and acquaintances, input sellers, and promotion agents respectively have respondents' highest priorities regarding the reference to under-study sources.

The variable of the extent of use of the information sources and channels is computed via the set of items inserted in Table 5. After gathering the information for determining

Table 3 Prioritization of the factors affecting entrepreneur's success in small and medium businesses (n = 100).

Item	Mean*	Variation coefficient	Priority
Product quality	4.78	0.140	1
Competitiveness regarding other businesses	4.58	0.145	2
Ability to confront with unexpected events	4.42	0.158	3
Specialization of labor (education)	4.38	0.173	4
Proper management of costs	4.36	0.175	5
Use of experts' views	4.35	0.185	6
Participating in training courses	4.33	0.189	7
Workforce skills (administrative and practical experience)	4.31	0.201	8
Acting base on the schedule	4.30	0.204	9
Investigation of the plan Constant	4.29	0.214	10
Investment security	4.15	0.238	11
Cost and benefit coordination	3.85	0.239	12
Diversity of business activities	3.76	0.245	13
Business resistance during economic downturn	3.73	0.249	14
Constant connection with market	3.66	0.248	15
Transfer of profit to capital	3.59	0.250	16
Government support as tax rebate	3.41	0.252	17
Reaction and response to market demand	3.16	0.299	18
Government support as commercial benefit exemption	2.82	0.374	19
Use of advanced agricultural technologies	2.81	0.390	20
Use of internet	2.15	0.398	21

* 0 = none, 1 = very little, 2 = little, 3 = medium, 4 = much, 5 = very much.

Table 4 Frequency distribution based on the contact priority with used information sources/channels.

Information sources	Mean*	SD	Variation coefficient	Priority
Other businesses	3.97	0.96	0.244	1
Neighbors and acquaintances	3.97	1.20	0.304	2
Input sellers	3.20	0.97	0.304	3
Junior technical (Extension agent)	3.72	1.29	0.347	4
Credit institutions	3.54	1.23	0.347	5
Example entrepreneurs	3.54	1.24	0.352	6
Relatives	3.97	1.40	0.352	7
Agricultural books and publications	3.54	1.53	0.432	8
Group visits	3.54	1.53	0.432	9
Radio and television	3.46	1.52	0.439	10
Educational and extension courses	3.72	1.64	0.440	11
Local creditors	3.32	1.46	0.440	12
Extension journals	2.64	1.23	0.465	13
Experts	3.04	1.44	0.470	14
Educational films	2.28	1.02	0.478	15
Public institutions (Jihad Agricultural Organization)	2.64	1.42	0.539	16
Agricultural research centers	2.30	1.28	0.565	17

* 0 = none, 1 = very little, 2 = little, 3 = medium, 4 = much, 5 = very much.

Table 5 Frequency distribution of respondents regarding information seeking behavior (n = 100).

Level	Category range	Frequency	Percentage	Cumulative percentage
Weak	Less than 28	19	19	19.0
Medium	28–37	23	23	42.0
Good	38–47	53	53	95.0
Excellent	More than 48	5	5	100.0
	Total	100	100	

founders' benefit level from the communication–information sources, the interval of standard deviation from the mean (ISDM) method was used, and based on Table 5, the highest frequency was attributed to the respondents whose information seeking behavior was evaluated as good (53 individuals, 53.0%).

3.4. Analyzing the relations of independent variables and the extent of use of the communication–information sources

The findings inserted in Table 6 show that there is a negative significant relationship of 1% between the extent of use of the communication–information sources and the age, duration of the activity in the job and the success rate variables, and a positive significant relation of 1% between entrepreneurial characteristics and the number of individuals establishing the business and the times of using the loans.

In investigating the relation between the extent of use of the communication–information sources and entrepreneurs' personal characteristics, it was found that there is a positive significant relation of 1% between the variables of incentive, organizing capability, innovation rate, experience, and perseverance, and that of 5% between innovation rate and information seeking behavior (Table 7). Also, according to the results

Table 6 Correlation coefficients between dependent and independent variables in research (n = 100).

Variable	Correlation Coefficient	Significance Level
Age	**−0.519	0.000
Education	0.126	0.213
Duration of being active in the job	**−0.312	0.002
Entrepreneurial characteristics	**0.272	0.006
Job satisfaction	−0.124	0.218
The number of individuals employed by the business	**0.288	0.004
The amount of the credit requested	0.033	0.745
The amount of the credit approved	0.150	0.137
Times of using the loan	**0.293	0.003
Business success rate	**0.631	0.000

** Significance level 5%.

Table 7 Correlation coefficients between personality variables and dependent variable in research (n = 100).

Variable	Correlation coefficient	Significance level
Incentive	**0.195	0.001
Organization	**0.396	0.000
Innovation	**0.288	0.004
Creativity	*0.223	0.026
Experience	**0.269	0.007
Perseverance	**0.475	0.000
Responsibility	0.169	0.093
Foresight	0.092	0.363
Flexibility	−0.055	0.589
Conducting the task completely	−0.174	0.084

* Significance level 1%.
** Significance level 5%.

Table 9 Correlation coefficients between information seeking behavior and business success rate variables.

Variable	Coefficients	Significance level
Extension agent	**0.531	0.000
Subject specialists	**0.407	0.000
Extensional courses	**0.477	0.000
Group visits	**0.609	0.000
Other producers	**0.475	0.000
Truster	**0.414	0.000
Input seller	**0.305	0.002
Radio and television	**0.186	0.003
Educational films	**0.175	0.001
Extension journals	0.186	0.064
Relatives	0.132	0.189

** Significance in %1 level.

inserted in Table 8, a significant difference of 5% has been observed between entrepreneurs' type of activity and the extent of use of the information sources among individuals.

3.5. Relationship between information sources and success rate of small and medium businesses

Regarding the results inserted in Table 9, a positive significant relation of 1% was observed between information sources and channels such as the promoter, subject specialists, meetings and educational–promotional courses, group visits, other producers, creditors, input sellers, radio and television, educational films, and entrepreneurs' success rate.

3.6. Regression analysis

In this part, the stepwise regression analysis was used to predict the role and the impact of communication variables on the dependent variable and business success. The result of the regression analysis showed that 28.2% of the variation in business success is accounted for by consultation rate with the experts and the promoters, 25.3% by the other producers, 7.2% by input sellers, 3.1% by group visits, 3.4% by educational films, 4.5% by creditors, and 6.7% of the variations in the dependent variable of the research has been accounted for by the mass media as radio and television, such that these 7 communication channels account for totally 78.4% of the variations in the success rate of the small and medium businesses (Table 10).

Given the explanations presented and the results of the Table 10, the linear equation derived from the regression would be as follows:

$$Y = 48.592 + 3.808X_1 + 4.638X_2 - 5.721X_3 - 1.044X_4 + 4.836X_5 + 4.252X_6 - 2.463X_7$$

where Y: business success rate, X_1: promoters, X_2: other producers, X_3: input sellers, X_4: group visit, X_5: educational films, X_6: creditors, and X_7: radio and television.

4. Conclusion and recommendation

This survey deals with the evaluation of information and communication resources role on the success of small and medium entrepreneur businesses in agricultural sector in Markazi Province. The research results revealed that the information seeking facilities of most of the entrepreneurs was seen at a good level (53 persons, 53%) and acquiring information from other businesses and consulting contacts with the neighbors and relatives, product sellers and promoting factors were listed as the highest priorities of the respondents, respectively. It seems that the resources for acquiring information was mostly inter-group and less they were outwardly. Also considering that about 67% of the respondents have attended on no training course relevant to the searching information on any business and according to the collative coefficient results which assessed the trained skill and acquired information in training classes on the success of any business as meaningful, the necessity for paying attention to hold training courses relevant to the information seeking by the officials is required so as to the

Table 8 Comparing the type of activity average and extent of use of information sources.

Variable	Category	N	Mean Rank/Mean	U/t	Df	Sig
Type of activity	Greenhouse	4	21.50	8.092	3	0.044
	Farming	14				
	Animal farming	67				
	Other	15				
Corporate in educational course	Yes	33	88.39	3.29	90.80	0.000
	No	67	82.87			
Total	100					

Table 10 Stepwise regression in brief regarding the role of communication channels in business success.

Variables	B	SE	Beta	T	Sig	R	R^2	R^2 adjusted
Constant	48.592	3.370	–	14.420	0.000	–	–	–
Extension agent	3.808	0.508	0.641	7.493	0.000	0.531	0.282	0.275
Other producers	4.638	0.573	0.426	8.097	0.000	0.732	0.535	0.526
Input sellers	−5.721	0.729	−0.522	−7.845	0.000	0.779	0.607	0.595
Group visit	−1.004	0.517	0.127	−2.021	0.046	0.779	0.638	0.623
Educational films	4.836	0.629	0.636	7.686	0.000	0.820	0.672	0.654
Creditors	4.252	0.680	0.492	6.252	0.000	0.847	0.717	0.699
Radio and television	−2.463	0.464	−0.351	−5.312	0.000	0.885	0.784	0.767

success of business activities could have been achieved. Since, performance of such training courses as optimization methods in improving information seeking ability and achieving modern technologies is approved and through emphasizing on flourishing such training courses, better conditions must be provided for the entrepreneurs in terms of time, location and contents of the promoting classes. Therefore, by conducting opinion polling among the studied entrepreneurs in this regard, appropriate grounds for compiling training courses consistent with their circumstances could have been created and through them, the contents of the training courses of the agricultural business based on the required contents would be compiled. In the results relevant to the motivation for establishing any business, supplying the capital for creating jobs is among the most important objectives of the people in initiating their businesses.

In other part of the results, it was found out that there is a negative and meaningful relationship between usage rate from information and communication resources and the variables of age as well as duration of operation on the job indicating that younger entrepreneurs and newly established businesses use information and communication resources remarkably. Also, there was a positive and meaningful relationship between variables of information seeking behavior and number of people founding the business as well as usage number of loans. Therefore, it seems that by developing businesses, the people' need for information seeking will be and or their knowledge about the legal authorities and governmental supports and facilities increased leading to a higher rate of requesting for the provided loans (credits) by the entrepreneurs and developing businesses as well as increased number of the employed persons in businesses and higher rate of job creation in the country.

Moreover, the regression analysis results showed that seven communication channels, promoters, other producers, product sellers, group visit, training films, creditors, radio and TV in order of significance have defined 78.4% of the dependent variable changes. Since, holding seminars, sessions and group meetings in which people can exchange their experiences in administrating and implementing businesses is considered to have an outstanding position. With the regard to the significance of small- and medium-size entrepreneurs businesses has been considered as a rescuing solution for a remedy of unemployment crisis and creating economic boom, so its informational aspects should not be limited only to the governmental centers. Creating internet-based familiarity grounds, printed and published advertisement tools especially brochures throughout universities and rural centers, using advertising banners and so forth in order to improve information technology is recommended.

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